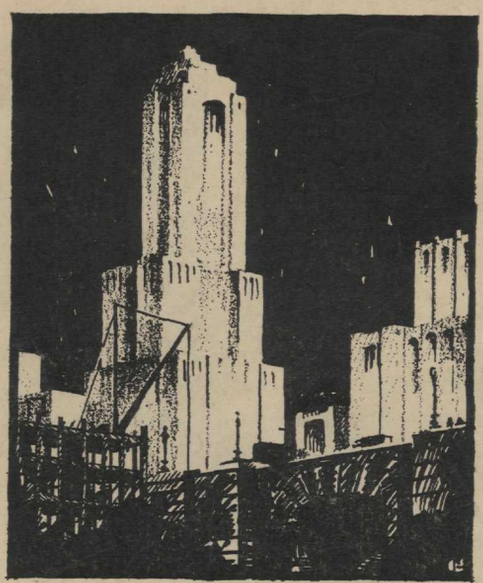
THE OHIO STATE ENGINEER



Member of

ENGINEERING COLLEGE MAGAZINES ASSOCIATED

May, 1927

Devils for Rough Work—

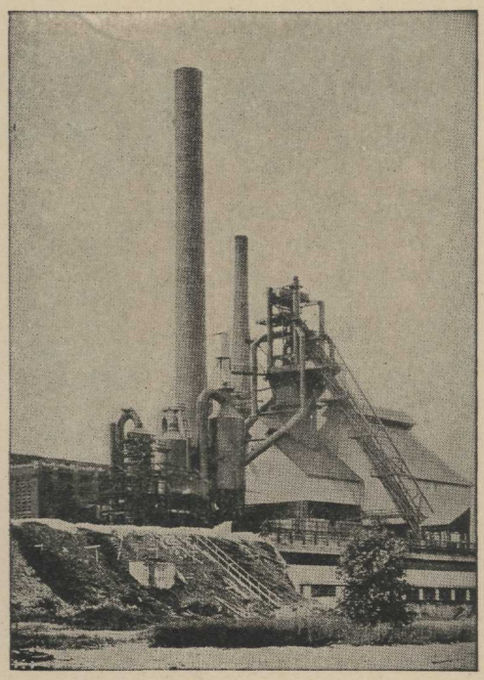
Yet Delicate in Design

THE steel industry demands and is using Otis Furnace and Bell Hoists for their modern blast furnaces. These may be in continuous operation night and day for periods of from three to seven years, depending upon business and life of furnace lining. Hence the Otis Hoist and Otis automatic controlling mechanism must be extremely reliable and constructed to withstand the severe strains and wear imposed by years of continuous service.

One of the most important features in connection with furnace hoists is the question of continuous operation. The machines must be entirely dependable, so that there will be no shutting down for repairs, as it is a very expensive matter to shut down a complete blast furnace, which would be necessary if the hoist were out of service.

The filling of the furnace itself is done by one man, all operations being so interlocked that the operators cannot deviate from the prescribed schedule. The furnace is filled by means of skips operated by Otis automatic electric hoisting machines. The materials used are ore, coke and limestone, each load of a kind being dumped into the skip from a car carrying material from the bins.

As the skip reaches the top of the furnace, it automatically delivers the material onto the upper valve or small bell of the furnace. As the skip starts down, an automatic device starts the small bell operating mechanism, allowing the small one to open and deposit the material on the lower valve or large bell. After a number of predetermined loads of the various materials have been deposited on the large bell, the automatic device starts this into motion, allowing the full load to slide off the bell into the furnace.

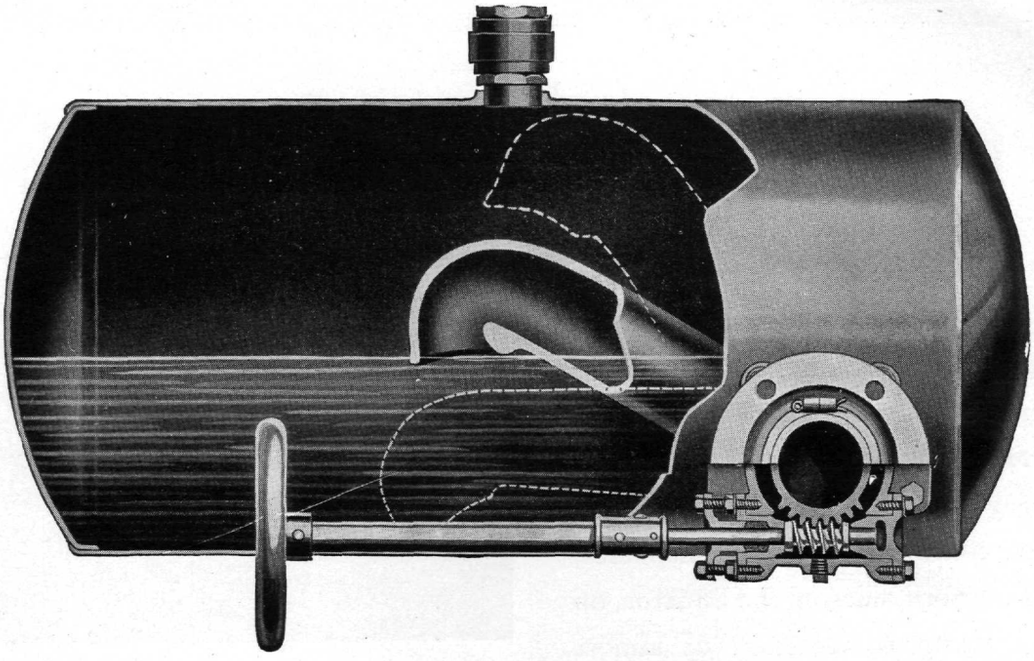


BLAST FURNACE WITH HOIST
Central Alloy Steel Corporation, Massillon, Ohio

THE WORLD'S WORD FOR ELEVATOR SAFETY

OTIS ELEVATOR COMPANY

Offices in All Principal Cities of the World



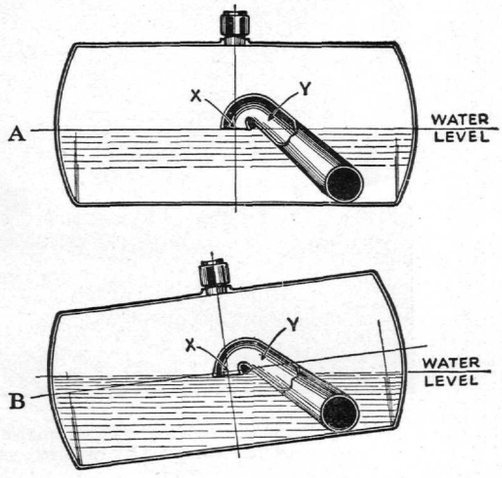
—another reason why Koehring Pavers Produce Dominant Strength Concrete

VITALLY important to the resultant strength and durability of concrete is the admittance of an accurate amount of water into the mixing drum at exactly the right instant. Long ago the Koehring Company recognized this fundamental requirement and set to work to devise an automatic water measuring system.

Today, the system is as nearly exact and accurate as human ingenuity has been able to design. A balanced three-way valve is automatically opened at a certain point, by the charging skip as it is raised, admitting the water into the mixing drum at exactly the right instant. The regulating hand wheel governs to a minute accuracy the amount of water which is to be used per batch.

All dribble is eliminated by the syphon-gravity principle which draws the water through a straight 3½ inch pipe into the mixing drum. Straight flow from the tank to drum secures a fast, clean discharge.

This is another pioneering development by Koehring engineers which with the Koehring batch meter, Koehring boom and bucket, and Koehring five action remixing principle produces standardized, dominant strength concrete of unvarying uniformity.



A and B illustrate clearly why changes of grade do not materially affect the accuracy of water measuring when using the Koehring system. X represents the volumetric center of the tank and Y the measuring arm.

"Concrete—Its Manufacture and Use" is a 210 page treatise on the uses of concrete, including 26 pages of tables of quantities of materials required in concrete paving work. To engineering students, faculty members and others interested we shall gladly send a copy on request.

KOEHRING COMPANY
MILWAUKEE WISCONSIN

MANUFACTURERS OF PAVERS, MIXERS—GASOLINE SHOVELS, CRANES AND DRAGLINES

OHIO STATE ENGINEER

Published quarterly by the students in the College of Engineering,
Ohio State University

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Vol. X MAY, 1927 No. 4

Subscription price, $1.00 per year, 25c per copy. Checks, money orders, etc., payable to the Ohio State Engineer.

Entered as second-class matter May 15, 1922, at the post office at Columbus, Ohio, under the Act of March, 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized December 8, 1922.